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EFFECTIVENESS OF MUSIC THERAPY ON SELECTED EFFECTS OF CHEMOTHERAPY PATIENTS

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ABSTRACT

Introduction: The World Cancer Research Fund emphasised that most cancers is the main reason of lack of lifestyles worldwide, with 7.6 million of her deaths in 2008 (approximately 13% of all deaths). By 2030, the number of cancer cases is projected to exceed 11 million.

Aim: The Objective of study is to determine the effectiveness of music therapy on selected side effects of chemotherapy among cancer patients and to find the association of demographic variables with selected side effects of chemotherapy among cancer patients in the experimental group and the control group.

Material and Methods: three parallel arm RCT with SNOSE randomisation was done and with eight patients assessed to identify the selected side effects experienced by cancer patients, which include nausea, vomiting and lack of sleep , across three chemotherapy sessions. The Multinational Association of Supportive Care in Cancer (MASCC) was utilized to assess nausea and vomiting, while the Pittsburgh Sleep Quality Index scale was employed to evaluate sleep quality. The participants were divided into two groups, each consisting of four patients each. The experimental group received music therapy for 30 minutes each day, whereas the control group was provided with standard treatment care for three consecutive chemotherapy sessions..

Result shows a significant association seen between patients performing Music therapy. Results showed that the group receiving MT had a reduction in chemotherapy side effects compared with control group.

Conclusion: The study concluded that music therapy was more effective in controlling the side effects of chemotherapy among cancer patients. Positive difference in the selected side effects of chemotherapy among cancer patients before and after the administration of music therapy in the experimental group.

Keywords: Cancer, Music therapy, Chemotherapy, The Multinational Association of Supportive Care in Cancer (MASCC), Nausea, Vomiting, Lack of sleep, Pittsburgh Sleep Quality Index scale

INTRODUCTION:

According to the World Health Organisation globally, Cancer is certainly considered the main reasons of death. It is been estimated that in 2004 about 7.4million humans died of cancer and if it continues, more than 83.2million patients could have died by 2020. Around 8550000 new most cancers instances are recognised in india each year. The main organs afflicted by most cancers and leading to loss of life are the lungs (1.4 million), stomach (740,000) and liver (7 million). 100 000) colorectal (610 000) and breast (460 000). (World's Largest Cancer Research Fund International, 2011)

The Indian Council of Medical Research says that breast cancers are common cancer in women, according to registries in Mumbai, Delhi and Bangalore. The expected number of breast cancer cases in India in 2015 and 2020 is about 106,124 and 123,634 respectively. About 1.3 three million easy instances of breast most cancers are stated in India every year, up from 54,000 a decade ago (Swami Nathan S., 2014)

A systematic review of the effectiveness of music therapy for life quality, anxiety, depression and ache in cancer clients was conducted. September 2018, five digital databases had been looked for randomized managed trials comparing song remedy for most cancers sufferers. Cochrane Handbook model and Revman software were used. Results confirmed that song remedy considerably progressed the general great of lifestyles of most cancers sufferers and became powerful in lowering anxiety, melancholy, and ache ratings. (Yang Fei, 2020)

A preliminary experimental take a look at to assess the efficacy of modern muscle rest on tension tiers in hypertensive sufferers in decided on regions of Ludhiana District, Punjab. Forty sufferers have been decided on the use of a convenient sampling method for pattern selection. Anxiety levels earlier than and after intervention has been assessed and as compared the use of the Beck Anxiety Inventory Scale. At pre-intervention assessment, sixty percent of sufferers had low-degree tension, observed through moderate (37.5%) and high-degree (2.5%) tension, while at post-intervention assessment, 97.5% of sufferers I changed into concerned approximately A low degree of tension observed through a moderate (2.5%) degree of tension. The results reflect a significant reduction in anxiety levels after using progressive muscle relaxation techniques. (Lacina, 2018).

METHODOLOGY

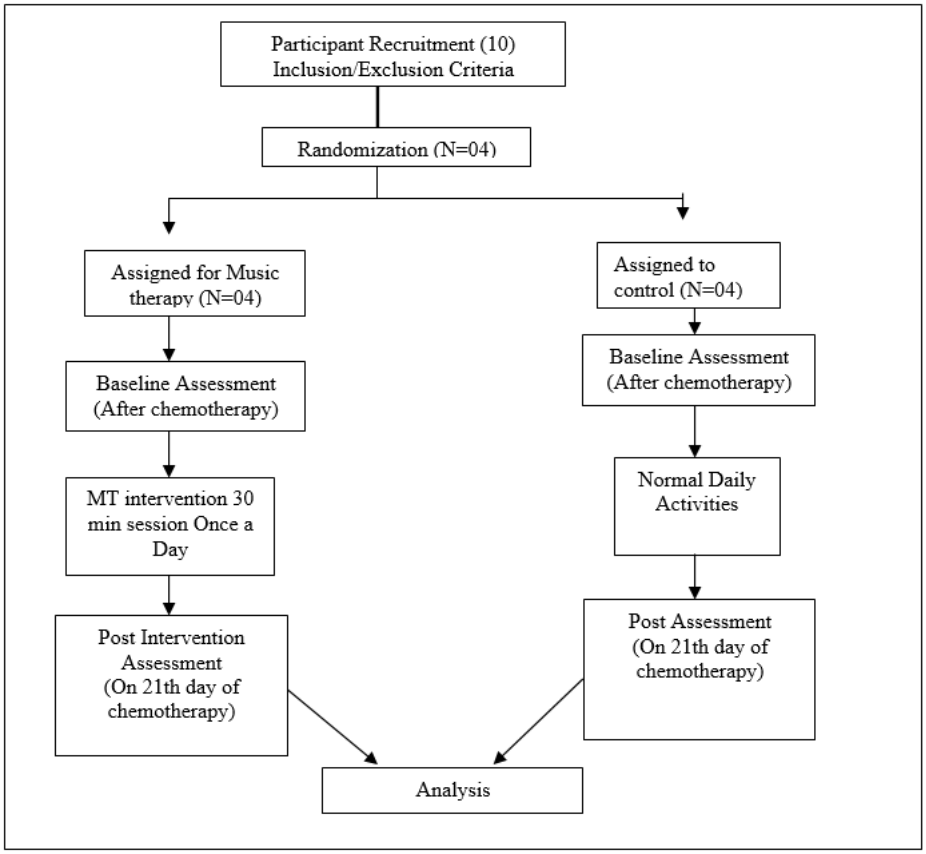
The present study was conducted at the Oncology department of Fortis Memorial Research Institute, located in Gurugram.

This hospital, which has 330 beds, specializes in cancer care and serves as a chemotherapy center situated in Karkardooma, Delhi. The researcher utilized two departments for the study: the medical and surgical oncology wards, which provide a range of cancer treatments, including chemotherapy, radiation therapy, and surgical oncology. Additionally, they offer psycho-oncology and rehabilitation services to assist patients throughout their cancer journey. This setting was chosen due to the predominantly curative chemotherapy protocol, which includes Carboplatin, Cisplatin (alkylating agents), and Paclitaxel (microtubule agent), along with standard post-chemotherapy treatments such as Pantoprazole, Paracetamol, and Domperidone. The study design was a Randomized Controlled three-arm parallel group study. It was conducted from July 1, 2023, to October 29, 2023, at Fortis Memorial Research Institute in Gurugram. The study population comprised a total of 08 patients diagnosed with stage two and three cancer.

Ethical approval: Ethical approval for the execution of this study was secured from the Dean cum Principal of the School of Nursing Science and Research at Sharda University. Clearance was also obtained from the University Ethical Committee at Sharda University. Written formal permission will be acquired from the authorities of Fortis Memorial Research Institute. Informed consent was secured from every parent or legal guardian of qualified participants before their enrollment.

DATA COLLECTION PLAN:

Eight patients were selected through SNOSE Randomization, adhering to specific inclusion criteria. After the study was explained, consent was secured from each participant. The data collection tools were provided to them, which required approximately 40 minutes completing. Three participants received Music Therapy (MT), while the remaining three continued with their standard care, acting as controls. The data was analyzed using basic descriptive and statistical methods. The tools employed included Demographic data & Clinical variables, The Multinational Association of Supportive Care in Cancer (MASCC-MAT) for evaluating nausea and vomiting, and the Pittsburgh Sleep Quality Index for assessing sleep deprivation. The intervention for the experimental group was music therapy. Participants were subsequently instructed to listen to this music every 21 days during chemotherapy for three consecutive cycles. The researcher verified the recommended music with therapy musicians. Participants were asked to maintain a daily log and were contacted each day by the researcher via phone calls. The inclusion criteria encompassed patients diagnosed with stage II and III cancer, aged between 30 and 60 years, undergoing chemotherapy with Antimicrotubule agents and Alkylating agents (Carboplatin/Cisplatin/Paclitaxel) alongside standard treatments such as Pantoprazole, Paracetamol, and Domstal during chemotherapy. Conversely, the exclusion criteria included patients with any hearing impairments and those who are illiterate.



DATA ANALYSIS AND INTERPRETATION

Table 1: Demographic distribution of cancer patients admitted in oncology ward of selected hospital
N=4

	Experiment group		Control Group	
Socio Demographic data	**Frequency**	**Percentage(%)**	**Frequency**	**Percentage(%)**
1. **Age**				
a. 21-30 years	1	25.0	1	25
b. 31-40 years	1	25.0	0	0
c. 41-50 years	2	50.0	3	75
d. 51-60 years	0	0	0	0
2. **Gender**				
a. Male	3	75	1	25
b. Female	1	25	3	75
3. **Education Qualification**				
a. Primary Education	3	75	0	0
b. Graduate	1	25	1	25
c. Post graduate	0	0	3	75
d. Doctorate	O	O	O	O
4. Occupation				
a. Unemployed	0	0	1	25
b. Government employee	0	0	3	75
c. Private employee	1	25	0	0
d. Own Business	3	75	0	0
5. Martial status				
a. Married	3	75	3	75
b. Unmarried	1	25	1	25
c. Widow	0	0	O	0
d. Separated.	0	0	O	0
6. Monthly family income (in Rs.)				
a. Above 70,000	4	100	4	100
b. 50,001-70,000	0	0	0	0
c.30,001-50,000	0	0	0	0
d. Less than 30,000	0	0	0	0
7. Family history of cancer				
a. Present	3	75	3	75
b. Absent	1	25	1	25
8. History of substance used				
a. Tobacco	2	50	0	0
b. Alcohol	0	0	0	0

c. Tobacco and alcohol	1	25	1	25
d. None	1	25	3	75
9. Dietary habits				
a. Vegetarian	2	50	3	75
b. Non-vegetarian	2	50	1	25
10. Total cycles of chemotherapy				
a. 3-4	2	50	2	50
b.5-6	2	50	2	50
c.7-8	0	0	0	0
11. Presence of any co-morbidity				
a. Hypertension	1	25	0	0
b. Diabetes mellitus	0	0	2	50
c. Other	1	25	1	25
d. No co-morbidity	2	50	1	25
12. Time since diagnosis (year)				
a. Less than 1 year	1	25	2	50
b. 1 to 2 years	2	50	2	50
c. More than 2 years	1	25	O	O
13. Site of cancer,				
a.. Prostate/ovaries/uterus/chest	0	0	0	0
b. Lung/Head/Neck	3	75	0	0
c. Colon/Rectum/Stomach/Intestine	0	0	2	50
d. Others	1	25	2	50

Table No.1: Frequency and percentage distribution of socio demographic profile of Experiment group (Music Therapy) and Control Group

Table 2: Effectiveness of Music Therapy on Nausea and Vomiting & Lack of sleep among cancer patients. N=4

EXPERIMENTAL GR0UP		**Mean ±S.D**	**T value**	**Df**	**P Value**
MASCC-MAT SECTION -A	PRE- TEST	10.50±1.29	2.61	3	0.080
	POST TEST –I	11.75±0.50			
	PRE- TEST	10.50±1.29	5.96	3	0.009
	POST TEST –II	14.25±1.26			
	PRE- TEST	10.50±1.29	11.00	3	0.002
	POST TEST –III	16.00±0.82			
MASCC-MAT SECTION -B	PRE- TEST	15.25±2.06	5.00	3	0.015
	POST TEST –I	14.00±1.63			
	PRE- TEST	15.25±2.06	8.66	3	0.003
	POST TEST –II	12.25±2.06			
	PRE- TEST	15.25±2.06	9.80	3	0.002
	POST TEST –III	10.25±2.06			
PITTSBURGH	PRE- TEST	9.25±1.71	8.66	3	0.003

	POST TEST –I	6.75±2.06			
	PRE- TEST	9.25±1.71	9.80	3	0.002
	POST TEST –II	5.25±1.71			
	PRE- TEST	9.25±1.71	8.66	3	0.003
	POST TEST –III	4.25±0.96			

TABLE 2: Mean Score Distribution of Multinational Association of Supportive Care in Cancer (MASCC-MAT) & Pittsburgh sleep quality index among Experimental Group

Table 3: Effectiveness among Control Group on Nausea and Vomiting & Lack of Sleep
N=4

CONTROL GROUP		Mean±S.D	T value	Df	P Value
MASCC-MAT SECTION -A	PRE- TEST	9.75±1.25	-	-	-
	POST TEST –I	9.75±1.25			
	PRE- TEST	9.75±1.25	1	3	0.391
	P0ST TEST –II	10±0.81			
	PRE- TEST	9.75±l.25	2.611	3	0.080
	P0ST TEST –III	11±1.41			
MASCC-MAT SECTION -B	PRE- TEST	17±2.16	-	-	-
	POST TEST –I	17±2.16			
	PRE- TEST	17±2.16	0	3	1
	POST TEST –II	17±1.41			
	PRE- TEST	17±2.16	0.52	3	0.638
	POST TEST –III	17.25±1.25			
PITTSBURGH	PRE- TEST	13.25±2.06	1	3	0.391
	POST TEST –I	13±1.82			
	PRE- TEST	13.25±2.06	1	3	0.0391
	POST TEST –II	13±1.86			
	PRE- TEST	13.25±2.06	0	3	1
	POST TEST –III	13.25±1.50			

TABLE 3: Mean Score Distribution of Multinational Association of Supportive Care in Cancer (MASCC-MAT) & Pittsburgh sleep quality index among Control group

Table 4: Pre & Post-Test, Mean Difference Between Groups Comparison by Unpaired "T" Test values on the Selected Side Effects of Chemotherapy among Patients in the Experimental Group and Control Group.
N=4

EXPERIMENTAL GROUP		F	t	P	Mean Difference
MASCC-MAT SECTION -A	PRE- TEST	0.070	0.83	0.437	0.75
	POST TEST –III	1.000	6.12	0.001	5
MASCC-MAT SECTION -B	PRE- TEST	0.018	1.17	0.286	1.75
	POST TEST –III	0.436	5.79	0.001	7
PITTSBURGH	PRE- TEST	1.000	2.98	0.024	4
	POST TEST –III	3.000	10.11	0	9

TABLE 4: Effectiveness of music therapy on Multinational Association of Supportive Care in Cancer (MASCC-MAT) & Pittsburgh sleep quality index between experimental and control group

Table 5: Association between Music Therapy and Mat –section A with selected Demographic variables
N=4

Socio Demographic data	Acute Nausea and Vomiting	Delayed Nausea and Vomiting	X^2 value	df	P value
1. Age			1.2O	2	0.549
a. 21-3O years	1	1			
b. 31-4O years	0	1			
c. 41-5O years	3	2			
d. 51-6O years	0	0			
2. Gender			2	1	0.157
a. Male	1	3			
b. Female	3	1			

3. Education Qualification			6	2	0.50
a. Primary Education	0	3			
b. Graduate	1	1			
c. Post graduate	3	0			
d. Doctorate	O	O			
4. Occupation			8	3	0.046*
a. Unemployed	1	0			
b. Government employee	3	0			
c. Private employee	0	1			
d. Own Business	0	3			
5. Marital status			0	1	1
a. Married	3	3			
b. Unmarried	1	1			
c. Widow,	O	O			
d. Separated,	O	O			
6. Monthly family income (in Rs.)			-	-	-
a. Above 70,000	4	4			
b. 50,001-70,000	0	0			
c.30,001-50,000	0	0			
d. Less than 30,000	0	0			
7. Family history of cancer			0	1	1
a. Present	3	3			
b. Absent	1	1			
8. History of substance used			3	2	0.223
a. Tobacco	0	2			
b. Alcohol	0	0			
c. Tobacco and alcohol	1	1			
d. None	3	1			
9. Dietary habits			0.533	1	0.465
a. Vegetarian	3	2			
b. Non-vegetarian	1	2			
10. Total cycles of chemotherapy			0	1	1
a. 3-4	2	2			
b.5-6	2	2			
c.7-8	0	0			
11. Presence of any co-morbidity			3.333	3	0.343
a. Hypertension	0	1			
b. Diabetes mellitus	2	0			
c. Other	1	1			
d. No co-morbidity	1	2			
12. Time since diagnosis (year)			1.333	2	0.513
a. Less than 1 year	2	1			
b. 1 to 2 years	2	2			
c. More than 2 years,	0	1			
13. Site of cancer.			5.333	2	0.069*
a.. Prostate/ovaries/uterus/chest	0	0			
b. Lung/Head/Neck	0	3			
c. Colon/Rectum/Stomach/Intestine	2	0			
d. Others	2	1			

*p<0.05

Table No.5: Table Representation of association between Multinational Association of Supportive Care in Cancer (MASCC-MAT) among Chemotherapy Patients Performing music therapy during first 24 hours after chemotherapy

Table No.6: Association between Music Therapy and Mat –section B with selected Demographic variables N=4

Socio Demographic data	Acute Nausea and Vomiting	Delayed Nausea and Vomiting	X^2 value	df	P value
1. Age					
a. 21-30 years	1	1			
b. 31-40 years	0	1	1.20	2	0.549
c. 41-50 years	3	2			
d. 51-60 years	0	0			
2. Gender					
a. Male	1	3	2	1	0.157
b. Female	3	1			

3. Education Qualification					
a. Primary Education	0	3	6	2	0.50
b. Graduate	1	1			
c. Post graduate	3	0			
d. Doctorate	0	0			
4. Occupation					
a. Unemployed	1	0	8	3	0.046*
b. Government employee	3	0			
c. Private employee	0	1			
d. Own Business	0	3			
5. Marital status					
a. Married	3	3	0	1	1
b. Unmarried	1	1			
c. Widow	0	0			
d. Separated	0	0			
6. Monthly family income (in Rs.)					
a. Above 70,000	4	4	-	-	-
b. 50,001-70,000	0	0			
c.30,001-50,000	0	0			
d. Less than 30,000	0	0			
7. Family history of cancer					
a. Present	3	3	0	1	1
b. Absent	1	1			
8. History of substance used					
a. Tobacco	0	2	3	2	0.223
b. Alcohol	1	1			
c. Tobacco and alcohol	0	0			
d. None	3	1			
9. Dietary habits					
a. Vegetarian	3	2	0.533	1	0.465
b. Non-vegetarian	1	2			
10. Total cycles of chemotherapy					
a. 3-4	2	2	0	1	1
b.5-6	2	2			
c.7-8	0	0			
11. Presence of any co-morbidity					
a. Hypertension	0	1	3.33	3	0.343
b. Diabetes mellitus	2	0			
c. Other	1	1			
d. No co-morbidity	1	2			
12. Time since diagnosis (year)					
a. Less than 1 year	2	1	1.33	2	0.513
b. 1 to 2 years	2	2			
c. More than 2 years	0	1			
13. Site of cancer					
a.. Prostate /Ovary/Uterus/Breast	0	0	5.33	2	0.069*
b. Lung/Head/Neck	0	3			
c. Colon/Rectum/Stomach/Intestine	2	0			
d. Others	2	1			

*p<0.05

Table No.6: Table Representation of association between Multinational Association of Supportive Care in Cancer (MASCC-MAT) among Chemotherapy Patients Performing music therapy during after first 24 hours after chemotherapy

Table No.7: Association between Music Therapy and Pittsburgh with Selected Demographic Variables
N=4

Socio Demographic data	Good sleep	Bad sleep	X^2 value	df	P value
1. Age					
a. 21-30 years	1	1	1.20	2	0.543
b. 31-40 years	1	0			
c. 41-50 years	2	3			
d. 51-60 years	0	0			
2. Gender					
a. Male	3	1	2	1	0.157
b. Female	1	3			

3. Education Qualification					
a. Primary Education	3	0	6	2	0.50
b. Graduate	1	1			
c. Post graduate	0	3			
d. Doctorate	0	0			
4. Occupation					
a. Unemployed	0	1	8	3	0.046 *
b. Government employee	0	3			
c. Private employee	1	0			
d. Own Business	3	0			
5. Marital status					
a. Married	3	3	0	1	1
b. Unmarried	1	1			
c. Widow	0	0			
d. Separated	0	0			
6. Monthly family income (in Rs.)					
a. Above 70,000	4	4	-	-	-
b. 50,001-70,000	0	0			
c.30,001-50,000	0	0			
d. Less than 30,000	0	0			
7. Family history of cancer					
a. Present	3	3	0	1	1
b. Absent	1	1			
8. History of substance used					
a. Tobacco	2	0	3	2	0.223
b. Alcohol	0	0			
c. Tobacco and alcohol	1	1			
d. None	1	2			
9. Dietary habits					
a. Vegetarian	2	3	0.533	1	0.465
b. Non-vegetarian	2	1			
10. Total cycles of chemotherapy					
a. 3-4	2	2	0	1	1
b.5-6	2	2			
c.7-8	0	0			
11. Presence of any co-morbidity					
a. Hypertension	1	0	3.33	3	0.343
b. Diabetes mellitus	0	2			
c. Other	1	1			
d. No co-morbidity	2	1			
12. Time since diagnosis (year)					
a. Less than 1 year	1	2	1.333	2	0.513
b. 1 to 2 years	2	2			
c. More than 2years	1	0			
13. Site of cancer					
a. Prostate/ovaries/uterus/chest	0	0	5.33	2	0.069 *
b. Lung/Head/Neck	3	0			
c. Colon/Rectum/Stomach/Intestine	0	2			
d. Others	1	2			

*p<0.05

Table No.7: Table Representation of association between Pittsburgh sleep quality index scales among chemotherapy patients performing music therapy

RESULT:

The data shows that the majority of cancer patients were in the age group (41-50 years) in MT group 50% and in control group it was 75%. Male in experiment group and female in control group i.e., 3(75%). Major patients were having primary education 3(75%) and post graduate 3(75%) in control group as educational qualification. Majority were have own business in MT group 3(75%) and government employee 3(75%) in control group chooses as occupation. Most of them were married .and have monthly family income above 70,000 and are having present family history of cancer MT group were tobacco 2(50%) chewing .Both groups patients have undergone 3-6 chemotherapy sessions. In control group diabetes mellitus 2(50%) were prominent as co-morbidity. Majority both group shows cancer diagnosis betweenr 1-2 years. Most of them in experiment group were have lung, head and neck 3(75%) cancer while control group shows G.I 2(50%) related cancer.

There is a significant association seen between patients performing Music therapy with MAT Section A (Acute Nausea & Vomiting) with site of cancer& occupation. MAT Section B (Delayed nausea & vomiting) with Pittsburgh scale with site of cancer and occupation. Differences between the two are significant in the selected side effects of chemotherapy among cancer patients before and after the administration of music therapy in the experimental group. There was clear positive mean The distinction between a pre-test and a post-test I, II, III in the selected side effects of chemotherapy among patients with cancer before and after treatment of Music therapy in the experimental group .

FINANCIAL SUPPORT: Nil

CONFLICTS OF INTEREST: There are no conflicts of interest

CONCLUSION:

Music therapy showed reduction in side effects like nausea & vomiting and improvement in sleep. There was a significant reduction in the episodes of acute vomiting, acute nausea, delayed vomiting, delayed nausea & improvement in sleep with music therapy group were as no improvement were seen in control group.

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